APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,170	11/30/2001	Jong Sun Park	2080-3-54	2899

35884   7590   03/26/2004

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ART UNIT	PAPER NUMBER
2182	4

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/007,170	PARK ET AL.
	Examiner	Art Unit	
	Niketa I. Patel	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*30 November 2001*</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *1-44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

   The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. For example, line 4 of claim 1 recites, **"being inputted the data through an I2C interface"**, it should recite, **"inputting the data through an I2C interface"**.

4.   Claim 44 recites the limitation "the operation mode" in

line 3. There is insufficient antecedent basis for this

limitation in the claim.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs

of 35 U.S.C. 102 that form the basis for the rejections under

this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) The invention was patented or described in a printed publication in this or
> a foreign country or in public use or on sale in this country, more than one
> year prior to the date of application for patent in the United States.

6.   As far as the examiner can interpret the claims in light of

the U.S.C. 112, second paragraph, supra, claims 1-4, 14-15, 18-

21 and 24 are rejected under 35 U.S.C. 102(b) as being

anticipated by Kiwiet et al. U.S. Patent Number: 5,854,618

(hereinafter referred to as "Kiwiet".)

7.   **Referring to claim 1,** Kiwiet discloses an interface method

for a display system, comprising: outputting data including an

image and a text according to an operation mode of a system [see

column 1 - lines 31-47]; and being inputted the data through an

I2C interface in a standby mode and displaying the image and

text on a screen [see column 2 - lines 45-67; figure 1 -

elements 17, 12, 14], being inputted the data through a video

codec in an active mode and displaying the image and text on the

screen [see column 2 - lines 45-67; figure 1 - elements 10, 12,

14.]

8.   **Referring to claims 2**, *Kiwiet* discloses that the data is

displayed on the screen without passing through the video codec

when the operation mode is in the standby mode [see column 2 -

lines 45-67; figure 1 - elements 10, 12, 14, 17.]

9.   **Referring to claim 3**, *Kiwiet* discloses that the image is a

still image, a moving picture and an animation [see column 3 -

lines 1-34, 49-62.]

10.   **Referring to claim 4**, *Kiwiet* discloses that the data

includes an animation and/or a text to be displayed as a

background of a still image or only text [see column 3 - lines

1-34, 49-62.]

11.   **Referring to claim 14**, *Kiwiet* discloses an interface

apparatus for a display system, comprising: a main CPU (Central

Processing Unit) outputting data including an image and a text

according to an operation mode of a system [see figure 1 -

element 13]; a video codec being inputted the data and

outputting the data by interfacing with the main CPU in

accordance with the operation mode [see figure 1 - elements 10,

13; column 2 - lines 45-67]; and a driver being inputted the

data through the video codec in accordance with the operation

mode or being inputted the data from the main CPU through an I2C

interface of the main CPU and displaying the inputted image and

text on a screen [see figure 1 - elements 10, 17, 13, 14; column

2 - lines 45-67.]

12. **Referring to claim 15,** *Kiwiet* discloses wherein the data is

displayed on the screen without passing through the video codec

when the operation mode is in the standby mode [see column 2 -

lines 45-67.]

13. **Referring to claim 18,** *Kiwiet* discloses wherein the main

CPU transmits the data to the driver through the I2C interface

when the operation mode is the standby mode [see column 2 -

lines 45-67.]

14. **Referring to claim 19,** *Kiwiet* discloses wherein the video

codec is inputted the data and outputs the data to the driver by

interfacing with the main CPU when the operation mode is the

active mode [see column 2 - lines 45-67.]

15. **Referring to claim 20,** *Kiwiet* discloses wherein the driver

is directly inputted the data from the main CPU and displays it

on the screen when the operation mode is the standby mode [see

column 3 - lines 1-34, 49-62.]

16. **Referring to claim 21,** *Kiwiet* discloses wherein the image

is a still image, a moving picture and an animation [see column

3 - lines 1-34, 49-62.]

17. **Referring to claim 24,** *Kiwiet* discloses wherein the data

includes an animation and/or a text to be displayed as a

background of a still image or only text [see column 3 - lines

1-34, 49-62.]

18. As far as the examiner can interpret the claims in light of

the U.S.C. 112, second paragraph, supra, claims 37-38 are

rejected under 35 U.S.C. 102(b) as being anticipated by Singhal

et al. U.S. Patent Number: 5,488,385 (hereinafter referred to as

"*Singhal*".)

19. **Referring to claim 37,** *Singhal* teaches a method

transmitting and writing data in a memory of a LCD driver

through an I2C interface of a main CPU (Central Processing Unit)

of a mobile communication terminal, an interface method for a

display system, comprising: outputting sequentially a byte for

slave address, a byte for mode setting and a byte for pixel data

when data is burst data [see *Singhal* column 5 - lines 62-67;

column 6 - lines 1-5, 42-48; column 10 - lines 1-29]; outputting

sequentially a byte for slave address, a byte for mode setting,

a byte for area start address, a byte for area end address and a

byte for pixel data when data is area data [see *Singhal* column 5

- lines 62-67; column 6 - lines 1-5, 42-48; column 7 - lines 9-

18; column 10 - lines 1-29]; outputting sequentially a byte for

slave address, a byte for mode setting, a byte for line address

and a byte for pixel data when data is line data [see *Singhal*

column 5 - lines 62-67; column 6 - lines 1-5, 42-48; column 7 -

lines 9-18; column 10 - lines 1-29]; and outputting sequentially

a byte for slave address, a byte for mode setting, a byte for

pixel address and a byte for pixel data when data is pixel data

in order to write the data in the memory of the LCD driver [see

Singhal column 5 - lines 62-67; column 6 - lines 1-5, 42-48;

column 7 - lines 9-18; column 10 - lines 1-29.]

20. **Referring to claim 38,** *Singhal* teaches a method wherein the

data is one of an image type and a text type [see *Singhal* column

5 - lines 62-67; column 6 - lines 1-5, 42-48; column 7 - lines

9-18; column 10 - lines 1-29.]

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior art
> are such that the subject matter as a whole would have been obvious at the time

the invention was made to a person having ordinary skill in the art to which
said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

22.   As far as the examiner can interpret the claims in light of

the U.S.C. 112, second paragraph, supra, claims 22-23 are

rejected under 35 U.S.C. 103(a) as being unpatentable over

Kiwiet et al. U.S. Patent Number: 5,854,618 (hereinafter

referred to as "Kiwiet".)

23.   **Referring to claims 22 and 23**, Kiwiet discloses an

interface method for a display system, comprising: outputting

data including an image and a text according to an operation

mode of a system [see column 1 - lines 31-47] however, does not

teach that the driver is inputted the data at 30 frames per

second through the video codec when the operation mode is the

active mode and displays the image and text of the data on the

screen at the same speed, wherein the driver is inputted the

data at 5 frames per second through the video codec when the

operation mode is the standby mode and displays the image and

text of the data on the screen at the same speed.

It would have been obvious to one or ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to operate a codec at a higher

speed during an active mode and at a slower speed during standby

mode to get the advantage of saving system resources. It would

have been obvious to one of ordinary skill in the art at the time of applicant's invention to operate a codec at a higher speed during an active mode and at a slower speed during standby mode to get this advantage.

24.   As far as the examiner can interpret the claims in light of the U.S.C. 112, second paragraph, supra, claims 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal et al. U.S. Patent Number: 5,488,385 (hereinafter referred to as "Singhal".)

25.   **Referring to claim 39,** Singhal teaches a display system with a memory however, does not teach a pertinent bit of the byte for slave address is set as "1" when the data is image data, and the pertinent bit of the byte for slave address is set as "0" when the data is text data.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention that it was old and well known in the computer art to get the advantage of differentiating various types of data using different binary bits. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to set a bit of the salve address as "1" or "0" to get this advantage.

26. **Referring to claims 40, 41,** *Singhal* teaches a display

system with a memory however, does not teach wherein the byte

for mode setting includes an image/text classification bit, a

data type classification bit and an EOFD (end of frame data) bit

informing the end of frame data wherein the EOFD bit is set as

"1" when data of one frame is transmitted at one time.

It would have been obvious to one of ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to get the advantage of

differentiating various types of data using different binary

bits. It would have been obvious to one of ordinary skill in the

art at the time of applicant's invention to include an

image/text classification bit, a data type classification bit

and an EOFD (end of frame data) bit informing the end of frame

data to get this advantage.

27. **Referring to claim 42,** *Singhal* teaches a display type bit

and an OSD memory selection bit of the byte for mode setting in

the burst data outputting step are set so as to be corresponded

to an access method of main CPU (Central Processing Unit) [see

Singhal column 5 - lines 62-67; column 6 - lines 1-5, 42-48;

column 10 - lines 1-29.]

28. **Referring to claim 43,** *Singhal* teaches wherein it is

possible to update up to two image pixels by using a random byte

in the pixel data outputting step [see *Singhal* column 5 - lines

62-67; column 6 - lines 1-5, 42-48; column 10 - lines 1-29.]

29. **Referring to claim 44,** *Singhal* teaches a display system

with a memory however, does not teach setting the operation

(active, standby, power down) mode by using a control register

or selecting a position of OSD (on screen display) regions of

determining on/off of the selected OSD regions.

It would have been obvious to one or ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to set different modes via a

control register to get the advantage of being able to set

various operating mode using inexpensive registers. It would

have been obvious to one of ordinary skill in the art at the

time of applicant's invention to use control register to get

this advantage.

30. As far as the examiner can interpret the claims in light of

the U.S.C. 112, second paragraph, supra, claims 5-13, 16-17 and

25-36 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kiwiet et al. U.S. Patent Number: 5,854,618 (hereinafter

referred to as "*Kiwiet*") and further in view of Singhal et al.

U.S. Patent Number: 5,488,385 (hereinafter referred to as

"*Singhal*".)

31. **Referring to claim 5,** *Kiwiet* discloses an interface method for a display system, comprising: outputting data including an image and a text according to an operation mode of a system [see column 1 - lines 31-47] however does not disclose that the data is transmitted to a memory, written in the memory and displayed on the screen. *Singhal* teaches a use of display system with a memory that significantly improves image quality [see *Singhal* column 2 - lines 31-43] and further advantage is that the memory allows one to store frame buffer data and control register data necessary to permit the generation of the multiple independent displayable images [see *Singhal* column 2 - lines 66-67; column 3 - lines 1-6.]

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous for the display system of *Kiwiet* to have a display memory associated with it in order to store frame buffer data and control register data necessary to permit the generation of the multiple independent displayable images. It is for this reason that one of ordinary skill in the art would have been motivated to implement *Kiwiet's* display system with a memory to allow storage of display and control data.

32. **Referring to claim 6,** *Kiwiet's* method for the display system as modified by the teachings of *Singhal* as applied to

claim 5, teaches transmitting and writing data in the memory

includes the steps of: outputting sequentially a byte for slave

address, a byte for mode setting and a byte for pixel data when

the data is burst data [see *Singhal* column 5 - lines 62-67;

column 6 - lines 1-5, 42-48; column 10 - lines 1-29]; outputting

sequentially a byte for slave address, a byte for mode setting,

a byte for area start address, a byte for area end address and a

byte for pixel data when the data is area data [see *Singhal*

column 5 - lines 62-67; column 6 - lines 1-5, 42-48; column 7 -

lines 9-18; column 10 - lines 1-29]; outputting sequentially a

byte for slave address, a byte for mode setting, a byte for line

address, a byte for pixel data when the data is line data [see

Singhal column 5 - lines 62-67; column 6 - lines 1-5, 42-48;

column 7 - lines 9-18; column 10 - lines 1-29]; and outputting

sequentially a byte for slave address, a byte for mode setting,

a byte for pixel address and a byte for pixel data when the data

in pixel data in order to write the data in the memory [see

Singhal column 5 - lines 62-67; column 6 - lines 1-5, 42-48;

column 7 - lines 9-18; column 10 - lines 1-29.]

33. **Referring to claim 7**, *Kiwiet's* method for the display

system as modified by the teachings of *Singhal* as applied to

claim 5, teaches wherein the data is one of an image type and a

text type [see *Kiwiet* column 2 - lines 1-34, 49-62.]

34. **Referring to claim 8,** *Kiwiet's* method for the display
system as modified by the teachings of *Singhal* as applied to
claim 5, teaches a display system with a memory however, does
not teach a pertinent bit of the byte for slave address is set
as "1" when the data is image data, and the pertinent bit of the
byte for slave address is set as "0" when the data is text data.

It would have been obvious to one of ordinary skill in the
art at the time of applicant's invention that it was old and
well known in the computer art to get the advantage of
differentiating various types of data using different binary
bits. It would have been obvious to one of ordinary skill in the
art at the time of applicant's invention to set a bit of the
salve address as "1" or "0" to get this advantage.

35. **Referring to claims 9 and 10,** *Kiwiet's* method for the
display system as modified by the teachings of *Singhal* as
applied to claim 5, teaches a display system with a memory
however, does not teach wherein the byte for mode setting
includes an image/text classification bit, a data type
classification bit and an EOFD (end of frame data) bit informing
the end of frame data wherein the EOFD bit is set as "1" when
data of one frame is transmitted at one time.

It would have been obvious to one of ordinary skill in the
art at the time of applicant's invention that it was old and

well known in the computer art to get the advantage of
differentiating various types of data using different binary
bits. It would have been obvious to one of ordinary skill in the
art at the time of applicant's invention to include an
image/text classification bit, a data type classification bit
and an EOFD (end of frame data) bit informing the end of frame
data to get this advantage.

36. **Referring to claim 11,** *Kiwiet's* method for the display
system as modified by the teachings of *Singhal* as applied to
claim 5, teaches wherein a display type bit and an OSD memory
selection bit of the byte for mode setting in the burst data
outputting step are set so as to be corresponded to an access
method of main CPU (Central Processing Unit) [see *Singhal* column
5 - lines 62-67; column 6 - lines 1-5, 42-48; column 10 - lines
1-29.]

37. **Referring to claim 12,** *Kiwiet's* method for the display
system as modified by the teachings of *Singhal* as applied to
claim 5, teaches wherein it is possible to update up to two
image pixels by using a random byte in the pixel data outputting
step [see *Singhal* column 5 - lines 62-67; column 6 - lines 1-5,
42-48; column 10 - lines 1-29.]

38. **Referring to claim 13,** *Kiwiet's* method for the display
system as modified by the teachings of *Singhal* as applied to

claim 5, teaches setting the operation (active, standby, power

down) mode by using a control register or selecting a position

of OSD (on screen display) regions or determining on/off of the

selected OSD regions [see Kiwiet column 2 - lines 46-67; see

figure 1 - element 13.]

39. **Referring to claims 16, 17,** Kiwiet discloses an interface

method for a display system, comprising: outputting data

including an image and a text according to an operation mode of

a system [see column 1 - lines 31-47] however, does not disclose

that the driver is a LCD (liquid crystal display) driver,

wherein the operation mode of the system is an active mode and a

standby mode of a LCD system. Singhal teaches a use of display

system with LCD driver that significantly improves image quality

[see Singhal column 2 - lines 31-43, lines 66-67; column 3 -

lines 1-6.]

One of ordinary skill in the art at the time of applicant's

invention would have clearly recognized that it is quite

advantageous for the display system of Kiwiet to have improved

display system, which provides user with desirable display

system. It is for this reason that one of ordinary skill in the

art would have been motivated to substitute Kiwiet's display

system with a LCD display system.

40. **Referring to claim 25,** *Kiwiet* discloses an interface method
for a display system, comprising: outputting data including an
image and a text according to an operation mode of a system [see
column 1 - lines 31-47] however, does not disclose that the
driver includes: a serial buffer temporarily storing data
inputted from the main CPU; and two OSD (on screen display)
memories being alternately inputted the data trough the serial
buffer, storing it and parallel-constructed so as to read per-
stored data from the other memory when the data is stored in the
memory. *Singhal* teaches a use of display system with LCD driver
that significantly improves image quality [see *Singhal* column 2
- lines 31-43, lines 66-67; column 3 - lines 1-6.]

One of ordinary skill in the art at the time of applicant's
invention would have clearly recognized that it is quite
advantageous for the display system of *Kiwiet* to have improved
display system, which provides user with desirable display
system. It is for this reason that one of ordinary skill in the
art would have been motivated to substitute *Kiwiet's* display
system with a LCD display system.

41. **Referring to claim 26,** *Kiwiet's* interface as modified by
the teachings of *Singhal* as applied claim 25 above teaches
wherein each OSD memory divides a region according to the data

transmission mode and operates part of regions as a power save

region [see *Kiwiet* column 2 - lines 21-35.]

42. **Referring to claim 27,** *Kiwiet's* method for the display

system as modified by the teachings of *Singhal* as applied to

claim 14, teaches a display system with a memory however, does

not teach wherein 1 byte is allocated for a mode setting such as

a display type, an image/text, a data type, and OSD memory

selection and an EOFD (end of frame data) in the I2C interfacing

between the main CPU and the driver.

It would have been obvious to one of ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to get the advantage of

differentiating various types of data using different binary

bits. It would have been obvious to one of ordinary skill in the

art at the time of applicant's invention to include an

image/text classification bit, a data type classification bit

and an EOFD (end of frame data) bit informing the end of frame

data to get this advantage.

43. **Referring to claim 28,** *Kiwiet's* method for the display

system as modified by the teachings of *Singhal* as applied to

claim 14, teaches a display system with a memory however, does

not teach wherein 3 bit image data describes 8 colors and 1 bit

text data describes background data and text data in the I2C

interfacing between the main CPU and the driver.

It would have been obvious to one of ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to get the advantage of being

able to display various colors and type of data by using various

combination of binary bits to represent these various colors and

type of data. It would have been obvious to one of ordinary

skill in the art at the time of applicant's invention to include

different combination of bits to get this advantage.

44. **Referring to claim 29,** *Kiwiet* discloses an interface

apparatus for a display system, comprising: a main CPU (Central

Processing Unit) outputting data including an image and a text

in accordance with an operation mode of a display system [see

figure 1 - element 13]; a video codec being inputted the data

and outputting the data by interfacing with the main CPU when

the operation mode is an active mode [see figure 1 - elements

10, 13; column 2 - lines 45-67]; and a display driver being

inputted the data through the video codec in the active mode,

being directly inputted the data from the main CPU through the

I2C interface without passing through the video codec in the

standby mode and displaying the data on a screen of the display

system [see figure 1 - elements 10, 17, 13, 14; column 2 - lines 45-67], however does not teach that the display system includes a LCD system with a LCD driver. *Singhal* teaches a use of display system with LCD driver that significantly improves image quality [see *Singhal* column 2 - lines 31-43, lines 66-67; column 3 - lines 1-6.]

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous for the display system of *Kiwiet* to have improved display system, which provides user with desirable display system. It is for this reason that one of ordinary skill in the art would have been motivated to substitute *Kiwiet's* display system with a LCD display system.

45. **Referring to claim 30,** *Kiwiet's* interface as modified by the teachings of *Singhal* as applied to claim 29 above, discloses wherein the image is a still image, a moving picture and an animation [see column 2 - lines 45-67.]

Referring to claims 31 and 32, *Kiwiet's* interface as modified by the teachings of *Singhal* as applied to claim 29 above, teaches an interface method for a display system, comprising: outputting data including an image and a text according to an operation mode of a system [see column 1 - lines 31-47] however, does not teach wherein the LCD driver is

inputted the data at 30 frames per second through the video

codec in the active mode and displays the image and text of the

data on the screen of the LCD at the same speed and wherein the

LCD driver is inputted the data at 5 frames per second through

the video codec in the standby mode and display the image and

text of the data on the screen of the LCD at the same speed.

It would have been obvious to one or ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to operate a codec at a higher

speed during an active mode and at a slower speed during standby

mode to get the advantage of saving system resources. It would

have been obvious to one of ordinary skill in the art at the

time of applicant's invention to operate a codec at a higher

speed during an active mode and at a slower speed during standby

mode to get this advantage.

46.

47. **Referring to claim 33,** *Kiwiet's* interface as modified by

the teachings of *Singhal* as applied to claim 29 above, discloses

an interface method for a display system, comprising: outputting

data including an image and a text according to an operation

mode of a system [see column 1 - lines 31-47] however, does not

disclose that the LCD driver includes: a serial buffer

temporarily storing data inputted from the main CPU; and two OSD

(on screen display) memories being alternately inputted the data

trough the serial buffer, storing it and parallel-constructed so

as to read per-stored data from the other memory when the data

is stored in the memory. *Singhal* teaches a use of display system

with LCD driver that significantly improves image quality [see

Singhal column 2 - lines 31-43, lines 66-67; column 3 - lines 1-

6.]

One of ordinary skill in the art at the time of applicant's

invention would have clearly recognized that it is quite

advantageous for the display system of *Kiwiet* to have improved

display system, which provides user with desirable display

system. It is for this reason that one of ordinary skill in the

art would have been motivated to substitute *Kiwiet's* display

system with a LCD display system.

48. **Referring to claim 34,** *Kiwiet's* interface as modified by

the teachings of *Singhal* as applied to claim 29 above, teaches

wherein each OSD memory divides a region according to the data

transmission mode and operates part of regions as a power save

region [see *Kiwiet* column 2 - lines 21-35.]

49. **Referring to claim 35,** *Kiwiet's* interface as modified by

the teachings of *Singhal* as applied to claim 29 above, teaches a

display system with a memory however, does not teach wherein 1

byte is allocated for a mode setting such as a display type, an

image/text, a data type, and OSD memory selection and an EOFD

(end of frame data) in the I2C interfacing between the main CPU

and the LCD driver.

It would have been obvious to one of ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to get the advantage of

differentiating various types of data using different binary

bits. It would have been obvious to one.of ordinary skill in the

art at the time of applicant's invention to include an

image/text classification bit, a data type classification bit

and an EOFD (end of frame data) bit informing the end of frame

data to get this advantage.

50.   **Referring to claim 36,** Kiwiet's method for the display

system as modified by the teachings of Singhal as applied to

claim 29, teaches a display system with a memory however, does

not teach wherein 3 bit image data describes 8 colors and 1 bit

text data describes background data and text data in the I2C

interfacing between the main CPU and the LCD driver.

It would have been obvious to one of ordinary skill in the

art at the time of applicant's invention that it was old and

well known in the computer art to get the advantage of being

able to display various colors and type of data by using various

combination of binary bits to represent these various colors and

type of data. It would have been obvious to one of ordinary

skill in the art at the time of applicant's invention to include

different combination of bits to get this advantage.

Conclusion

51. The prior art made of record and not relied upon is

considered pertinent to applicant's disclosure. The following

documents have been made record of to further show the state of

the art as it pertains to operating display in different modes:

    a.   Saunamaki et al. U.S. Patent Number: 6,597,351

    b.   Li U.S. Patent Number: 6,356,538

    c.   Chang et al. U.S. Patent Number: 6,618,773

    d.   Atkinson U.S. Patent Number: 6,385,734

    e.   Ho U.S. Patent Number: 5,757,365

    f.   Wells et al. U.S. Patent Number: 5,870,683

Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Niketa I.

Patel whose telephone number is (703) 305 4893. The examiner

can normally be reached on M-F 8:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can

be reached on (703) 308 3301. The fax phone number for the

organization where this application or proceeding is assigned is
703-872-9306.

Information regarding the status of an application may be
obtained from the Patent Application Information Retrieval
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may be obtained from either Private PAIR or Public PAIR. Status
information for unpublished applications is available through
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see http://pair-direct.uspto.gov. Should you have questions on
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